

NATIONAL SCIENCE FOUNDATION

4201 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22230



July 20, 2006

OFFICE OF
EQUAL OPPORTUNITY PROGRAMS

Poli A. Marmolejos
Director
Office of Civil Rights and Diversity
U.S. Department of Energy
1000 Independence Avenue, S.W.
Room 5B-168
Washington, D.C. 20585

Pbi

Dear Mr. Marmolejos:

This is to follow-up on our conversation this week regarding our prior commitment to exchange with each other the Letter of Findings (LOF) and the Title IX Compliance Review Report from our respective agencies. I am enclosing a copy of the LOF. We will send you a redacted copy of the Compliance Review Report under separate cover.

It was indeed a pleasure for the NSF staff to work with you and your staff on this joint Title IX compliance review. I especially would like to thank Mr. Lloyd Buddoo of your staff for his contribution as the Team Leader.

We look forward to working with you again on a mutual endeavor.

Best Regards,

Ron Branch

Ronald Branch
Director
Office of Equal Opportunity Programs
National Science Foundation

Enclosure:
Letter of Findings

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NATIONAL SCIENCE FOUNDATION
4201 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22230



June 15, 2006

OFFICE OF
EQUAL OPPORTUNITY PROGRAMS

Lee C. Bollinger
President
Columbia University
202 Low Library
535 West 116th Street
New York, NY 10027

Dear President Bollinger:

The National Science Foundation (NSF), Office of Equal Opportunity Programs (OEOP), has completed the compliance review of the Graduate Electrical and Mechanical Engineering Programs at the The Fu Foundation School of Engineering and Applied Science at Columbia University pursuant to Title IX of the Education Amendments of 1972 (Title IX).

OEOP is responsible for enforcing, among other civil rights statutes, Title IX of the Education Amendments of 1972 (Title IX), and its implementing regulations at 45 C.F.R. Part 618, which prohibits recipients of Federal financial assistance through NSF from discriminating on the basis of sex in educational programs or activities. Since the University is a recipient of Federal financial assistance from NSF, it has the responsibility for ensuring compliance with the regulations implementing Title IX. OEOP has jurisdiction over the University pursuant to Title IX.

The issues in the review involved an assessment of the role of the University's Title IX Coordinator in implementing and enforcing Title IX requirements and an evaluation of the University's policies and procedures for filing grievances and discrimination complaints. The review also involved whether women in the Graduate Electrical and Mechanical Engineering Programs were subjected to discrimination on the basis of sex with regard to admission, recruitment, access to course offerings, research projects, top professors, counseling, and other student services.

OEOP received documentation from the University and interviewed students, faculty and administrators. Based on our review, OEOP has concluded that the University is in compliance with Title IX with regard to the issues analyzed during this review. A description of the OEOP investigation and conclusion is below.

Electrical Engineering (EE) Graduate Program

According to the University, in 2002-2003, there were 243 students in the EE Graduate Program: 41 women and 202 men. In 2003-2004, there were 288 students: 55 were women and 233 were men. In 2004-2005, there were 285 students in the EE Graduate Program: 46 were women and 239 were men. The proportion of female graduate students in the EE Department (18%) differs

by 1% from the proportion of women in EE reported in the NSF Graduate Student Survey (GSS) (19%) for 2003.

Mechanical Engineering (ME) Graduate Program

In 2002-2003, there were 51 students in the ME Graduate Program: 5 were women and 46 were men. In 2003-2004, there were 58 students: 9 were women and 49 were men. In 2004-2005, there were 60 students in the Program: 8 were women and 52 were men. The proportion of female graduate students in the ME Department (12%) differs by 1% from the proportion of women in ME reported in the NSF GSS (13%) for 2003.

Summary of Issues, Findings and Recommendations

The NSF review team examined Columbia University's compliance with Title IX in three areas: 1) Program Policy/Design and Oversight, 2) Admission and Recruitment, and 3) Program Management.

Regulatory Standard: Designation of responsible employee and adoption of grievance procedures (Subpart A, Section 618.135)

The Team reviewed whether the University designated a responsible employee to coordinate and implement the enforcement of Title IX requirements and whether the University adopted grievance procedures. The University provided copies of its policies pertaining to Title IX and discrimination based upon sex, and specified how the policies should be implemented. The University's Office of Equal Opportunity and Affirmative Action has been designated to coordinate compliance activities under Title IX. The University is in compliance with this requirement of the applicable provisions. The Team did, however, note that the University should amend its EEO and sexual harassment policies to highlight the potential impact that these policies and their implementation may have on achievement of the University's EEO goals.

Regulatory Standard: Dissemination of Policy (Subpart A, Section 618.140)

The Team reviewed how the University disseminated its anti-discrimination policies. The Team reviewed the University's website where these policies are posted and printed copies of the policy are located in a published brochure, student handbook and manuals, i.e., "GSAS Rules and Regulations 2005-2006." There was no evidence that the policy was disseminated by less formal means, i.e., posted on bulletin boards. However, students were knowledgeable of these policies primarily by receiving copies of the policies at orientation and reviewing the website. Faculty and staff were provided training on "Discrimination and Sexual Harassment" during 2003, 2004 and 2005. The Team noted that the University may consider posting its policies on bulletin boards and expanding its use of campus organizations' newsletters and other campus based publications.

Regulatory Standard: Remedial and Affirmative Action and Self-Evaluation (Subpart C, Section 618.110)

The University did not provide a copy of its affirmative action plans for examination. Additionally, formal self-evaluation procedures did not appear to be in place. However, Susan Rieger, Associate Provost, provided a description of the University's self-evaluation process in response to a review conducted by NASA. The Team did not examine a sufficient amount of

information/data to make a compliance finding. The Team noted that the University should structure and conduct a self-analysis that consolidates discrete activities of organizational units engaged in student experiences. The University should also commit to providing a copy of the completed Self-Evaluation and Affirmative Action Plan to this office by December 31, 2006.

Regulatory Standard: Admission and Preference in Admission (Subpart C, Section 618.300 and Section 618.305)

The Team reviewed whether the University provides equal opportunity to male and female students and applicants for admission to its programs. The University presented evidence of compliance with the requirements to provide equal opportunity to male and female students and applicants for admission to its programs. There were disparities between the enrollment levels of male and female graduate students, but there is no evidence to suggest that the differences are due to discrimination. Except for differences in the total of males and females, the application, acceptance, and enrollment rates for the two groups are relatively comparable. Based upon a review of the College of Engineering's admissions policies and engineering programs and research, there does not appear to be preferences in admissions based upon gender.

Regulatory Standard: Recruitment, (Subpart C, Section 618.310)

The Team reviewed the University's recruitment practices. There is no evidence that these practices are discriminatory against women. However, the Team noted that the disparity may be significant enough to warrant treatment of the circumstances as if exclusion was a factor. Based upon an interview with the Chair of the EE Department, the Team noted that the University's efforts to attract both male and female students reflect a strategy to increase the enrollment of women not only in engineering, but also in the sciences. University officials acknowledged their awareness of the need for special efforts to recruit women for science and engineering. Current outreach efforts directed specifically toward females are carried out by Women in Science at Columbia (WISC), an organization that was founded in February 2004 by women graduate students in the Chemistry Department. The Team found that the University is in compliance with this provision of the regulations.

Regulatory Standard: Educational programs or activities (Subpart D, Section 618.300 and Access to course offerings, Section 618.415)

The Team reviewed whether the University provided males and females equal access to engineering programs and courses, research opportunities, and research facilities, i.e., laboratories, research equipment, and other benefits. None of the students who were interviewed expressed a lack of access to any programs, courses, or equipment. The EE Department has one female faculty member. There were no female faculty members in the ME Department. Advisor assignments were based on the mutual interests of the students and faculty members. The Team found that the University is in compliance with the requirements of the applicable provisions.

Regulatory Standard: Counseling and use of appraisal and counseling materials (Subpart D, Section 618.425)

The issue reviewed was whether the University discriminated against any person based on sex in the counseling or guidance of students or applicants for admission or in the use of appraisal and

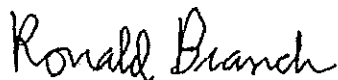
counseling materials. A description of the counseling services is provided in the University's Policy Statement on Discrimination and Sexual Harassment. The policy statement contains procedures for accessing confidential Guidance and Counseling. Additionally, counseling may be provided to the University's Ombuds Officer or a member of the University Panel on Discrimination and Sexual Harassment. The Team found that the University is in compliance with the requirements of the applicable provision; however, it recommends a wider distribution of these policies and procedures through a variety of media and formats. The Team also recommended scheduled reminders and communications on the services and protections afforded by Title IX.

Based upon the above, OEOP has concluded that the University is in compliance with Title IX and its implementing regulations with regard to the issues covered by this review. Therefore, OEOP is closing this review as of the date of this letter. This letter is not intended, nor should it be construed, to cover compliance by the University with regard to any laws, regulations or issues not specifically discussed herein. A copy of the Compliance Review Report will be sent to the Associate Provost, Office of Equal Opportunity and Affirmative Action under separate cover. The Report and appendices are considered to be internal working documents.

Under the Freedom of Information Act, it may be necessary to release this document and related correspondence and records upon request. If OEOP receives such a request, we will seek to protect, to the extent provided by law, personal information that, if released, could constitute an unwarranted invasion of privacy.

Please accept my sincere appreciation for the courtesies and cooperation that your staff, particularly Ms. Susan Rieger, extended to the NSF Team Members during this review. If you should have any questions regarding this review, please do not hesitate to contact me at (703) 292-8020 or (703) 292-7329. Please provide the requested information and any update by December 31, 2006.

Sincerely,



Ronald Branch
Director
Office of Equal Opportunity Programs

NATIONAL SCIENCE FOUNDATION

4201 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22230

August 14, 2006



OFFICE OF
EQUAL OPPORTUNITY PROGRAMS

Poli A. Marmolejos
Director
Office of Civil Rights and Diversity
U.S. Department of Energy
1000 Independence Ave., SW
Room 5B-168
Washington, DC 20585

Dear ^{Poli}Mr. Marmolejos,

For your records, attached is a copy of the Title IX Compliance Review Report of Columbia University (*excluding the appendices*), Fu Foundation School of Engineering and Applied Sciences (*SEAS*), Department of Electrical Engineering and the Department of Mechanical Engineering.

Should you have any questions or concerns, please do contact our office at (703) 292-8020 or via e-mail: rbranch@nsf.gov.

Sincerely,

Ronald Branch

Ronald Branch
Director
Office of Equal Opportunity Programs

Enclosure

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NATIONAL SCIENCE FOUNDATION



**TITLE IX COMPLIANCE REVIEW REPORT
OF
COLUMBIA UNIVERSITY
FU FOUNDATION SCHOOL OF ENGINEERING
AND APPLIED SCIENCES (SEAS)
DEPARTMENT OF ELECTRICAL ENGINEERING AND THE
DEPARTMENT OF MECHANICAL ENGINEERING**

Prepared by:

Office of Equal Opportunity Programs
4201 Wilson Blvd., Suite 255
Arlington, VA 22230

Ronald Branch, Director

Report Submitted: March 2006

**NATIONAL SCIENCE FOUNDATION
TITLE IX COMPLIANCE REVIEW REPORT
OF**

**COLUMBIA UNIVERSITY
FU FOUNDATION SCHOOL OF ENGINEERING AND APPLIED SCIENCE (SEAS)
DEPARTMENT OF ELECTRICAL ENGINEERING**

COLUMBIA UNIVERSITY AND SEAS (GRANT RECIPIENT) CONTACTS

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TYPE OF REVIEW

Compliance with Title IX of the of the Education Amendments of 1972 (as amended)

DATES OF ON-SITE REVIEW

December 12, 2005 to December 16, 2005

COMPLIANCE REVIEW TEAM MEMBERS

NSF Compliance Review Team Members/
Office of Equal Opportunity Program Staff:

Ronald Branch, Director, OEOP
Doris Starkes, OEOP Compliance Manager

Henry Blount, III, Head, Office of
Multidisciplinary Activities

JN KennedyGroup, LLP:

Joe N. Kennedy, President,
JN KennedyGroup, LLP
James S. Gee, Consultant,
JN KennedyGroup, LLP

I. JURISDICTION/AUTHORITY

Pursuant to *Title IX of the Education Amendments of 1972, as amended (20 U.S.C. 1681)* the National Science Foundation (NSF) is authorized to conduct Title IX compliance reviews of recipients of federal financial assistance. Compliance reviews are undertaken to ensure compliance of recipients, and sub recipients. To this end, NSF's Office of Equal Opportunity Programs is charged with the responsibility for undertaking proactive steps to ensure compliance with Title IX regulations.

Columbia University received \$70,424,018 in financial assistance from the NSF in 2004. The Fu Foundation School of Engineering and Applied Science's share of these funds was \$4,305,991. As a recipient of NSF's financial assistance, Columbia University and its School of Engineering and Applied Science, are subject to the compliance regulations associated with the use of these funds, pursuant to *45 CFR Part 618, "Nondiscrimination on the Basis of Sex in Education Programs or Activities Receiving Federal Financial Assistance," dated August 30, 2000.*

A. Criteria for Selection of Columbia University's Graduate Engineering Program

The National Science Foundation (NSF) selected Columbia University's Graduate Engineering Program as the subject of a Title IX compliance review pursuant to the administrative plan of NSF's Office of Equal Opportunity Programs (OEOP), which set forth specific neutral criteria leading to the selection of Columbia University's Graduate Engineering Program. These neutral criteria included the following:

- Utilization of NSF resources to encourage gender equity, rather than to discourage it,
- Possession of NSF-funded engineering program that seeks to cure the disparity of the under representation of women in the engineering workforce,
- Location near the NSF in the Northeastern part of the country,
- Student enrollment that evidences a decline in the percentage of women receiving degrees from the Engineering Department at the Master and Doctorate levels,
- Potential growth in faculty,
- Potential for identifying "promising practices" that may be used as a model for recommendations for future compliance reviews, and
- Education programs that allow OEOP to implement its compliance investigation by conducting a joint review with a similarly situated federal agency.

B. Joint Compliance Review

"OEOP determined, after reviewing agency resources and in consideration of NSF's desire to promote common policies and consistency in interagency practices, that NSF could best implement its compliance investigation by conducting a joint review with a similarly situated

federal agency. OEOB desired that NSF achieve the benefits that would result from such a joint review.

"After several meetings and a great deal of research, OEOB determined that the United States Department of Energy (DOE) was similarly situated to NSF, and that DOE also sought to best utilize its resources and leverage other federal resources by conducting a joint review with NSF. Extensive discussions and analysis resulted in DOE's selection of Columbia University's Department of Physical Sciences. The Fu Foundation School of Engineering offers Applied physics (medical/plasma/optical-laser/solid-state), which provides an additional basis for a joint review with DOE. OEOB considered DOE's selection of Columbia University as a factor, though not the determinative factor, in NSF's selection [of Columbia University]."

II. THE SCOPE AND PURPOSE OF THE COMPLIANCE REVIEW

This review was conducted as a discretionary review to determine whether the graduate education programs of Columbia University's School of Engineering and Applied Science (SEAS) are implemented in compliance with Title IX. The review was restricted to the School of Engineering's Graduate Program and limited to two departments: the Mechanical and Electrical Engineering Departments.

The purpose of the review was to determine whether male and female graduate students have equal access to research opportunities and benefits offered by SEAS. The review involved an assessment of the role of the University's Title IX Coordinator in implementing and enforcing Title IX requirements and an evaluation of the University's policies and procedures for filing grievances and discrimination complaints.

The review also included SEAS' education programs and practices--admission, recruitment, and access to course offerings, research projects, top professors; and counseling, financial and other student services. The review is intended to be a fact-finding process to--(1) examine Columbia University's Title IX compliance activities and program, (2) summarize the findings of the review and (3) make recommendations regarding appropriate corrective or proactive measures. Among the issues examined during this joint review are whether the institution:

- designated a responsible individual and adopted grievance procedures
- disseminated its Title IX Policies
- conducted a self-evaluation of its remedial and affirmative action programs
- discriminates in its admission programs

III. BACKGROUND INFORMATION

A. Columbia University and the Fu Foundation School of Engineering and Applied Science

"Since its founding in 1754, as King's College, Columbia University has always been an institution both of and for the city of New York. And, with an original charter directing it to teach, among other things, "the arts of Number and Measuring, of Surveying and Navigation [...] the knowledge of [...] various kinds of Meteors, Stones, Mines and Minerals, Plants and Animals, and everything useful for the Comfort, the Convenience and Elegance of Life," it has also always been an institution of and for engineers.

"Today, [Columbia University's] Fu Foundation School of Engineering and Applied Science, as it was named in 1997, continues to provide leadership for scientific and educational advances. Even Joseph Engelberger, Class of 1946, the father of modern robotics, could not have anticipated the revolutionary speed with which cumbersome and expensive 'big science' computers would shrink to the size of a wallet.

B. Electrical Engineering Department

"Contemporary electrical engineering is a broad discipline that encompasses a wide range of activities. A common theme is the use of electricity and electromagnetism for the generation, transmission, processing, storage, conversion, and control of information and energy. An equally important aspect is the human interface and the role of individuals as the sources and recipients of information. The rates at which information is transmitted today range from megabits per second to gigabits per second and, in some cases, as high as terabits per second. The range of frequencies over which these processes are studied extends from direct current (i.e., zero frequency), to microwave and optical frequencies.

"The faculty of the Electrical Engineering Department at Columbia University is dedicated to continued innovation through its program of academic instruction and research. ...A master's level program permits the graduate student to further specialize his/her knowledge and skills within a wide range of disciplines. For those who are interested in pursuing a career in teaching or research, our Ph.D. program offers the opportunity to conduct research under faculty supervision at the leading edge of technology and applied science. Research seminars are offered in a wide range of areas, including telecommunications, integrated circuits and systems, signal processing, photonics and microelectronics."¹

¹ Source: www.engineering.columbia.edu/aboutSEAS

C. Mechanical Engineering Department

"The Mechanical Engineering Department at Columbia was established in 1897. It has enjoyed a national and international reputation for much of its history. Between 1950 and 1980, Professors Dudley D. Fuller, Harold G. Elrod and Vittorio Castelli were the foremost leaders in the field of lubrication theory and practice. In the nineteen sixties, Professor Ferdinand Freudenstein (known as the Father of Modern Kinematics), revolutionized the field of mechanical design by ushering in the computer age in kinematics synthesis and the design of mechanism. In more recent times, the department is known for its research contributions in the fields of control theory, manufacturing, thermo-fluids and biomechanics, with faculty members giving keynotes lectures in national and international conferences and receiving best paper awards and professional society awards. All faculty members are active in research with many serving as editors/associate editors of professional journals and serving in leadership roles in professional societies.

"[Mechanical Engineering is] a small department with a student/faculty ratio of less than ten for undergraduate and about seven from graduate students. This allows our students to participate actively in the learning process and provides many opportunities to be involved in design competitions, projects, and research....

"The Department of Mechanical Engineering offers advanced instruction and research opportunities in a variety of areas of current interest in mechanical engineering. [The department] offer[s] a full range of degree programs, from an undergraduate program leading to the Bachelor of Science (B.S.) degree, to graduate programs leading to the Masters (M.S.), the professional degree of Mechanical Engineer (M.E.), Doctor of Engineering Science (Eng.Sc.D.), and Doctor of Philosophy (Ph.D.) degrees."²

IV. PREVIOUS TITLE IX COMPLIANCE ACTIVITY

The National Aeronautics and Space Administration (NASA), Office of Diversity and Equal Opportunity conducted a review to determine Columbia University's compliance with NASA Title IX regulatory requirements. The review was initiated on December 22, 2003 and was concluded on March 7, 2005. NSAS reported: "Based on the information [Columbia University, Office of Equal Opportunity and Affirmative Action] provided, it appears that [Columbia University] is in compliance with [NASA] regulations." NASA's investigation of Columbia University's compliance with Title IX did not include a site visit.³

² Source: *ibid.*

³ Appendix A, Tab 6

V. NSF'S COMPLIANCE REVIEW METHODOLOGY

A variety of data sources (as reflected herein) were reviewed in order to acquire a comprehensive picture of current Title IX policies and practices. In addition, University administrators, faculty members and graduate students in the Electrical and Mechanical Engineering Departments were interviewed in order to acquire an understanding of how Columbia University manages its educational and other programs in accordance with Title IX.

Review team members met with Susan Reiger, Associate Provost, Office of Equal Opportunity and Affirmative Action to discuss how the compliance review was to be conducted, areas to be reviewed, individuals to be interviewed, and the scheduled exit conference. Review team members also met separately with the following Columbia University officials:

Provost
Chairs of the Electrical and Mechanical Engineering Departments
Vice Provost, Arts and Sciences
Vice Provost, Diversity Initiatives
Vice President, Government Relations

Review team members investigated Columbia University's compliance with *45 CFR Part 618*. During the course of the compliance review, team members toured the classrooms and research facilities of the Electrical and Mechanical Engineering Departments. Reviewers conducted interviews with staff and faculty members and graduate students at the two departments to determine their awareness and knowledge of activities associated with Title IX and their involvement in those activities.

This report is based on information collected through management/staff interviews; program and business documents; discussions with students and observations by the review team of the educational environment and student-faculty interactions. Documents that were used to assess Columbia University's compliance were provided by Susan Reiger, Associate Provost, Office of Equal Opportunity and Affirmative Action. The following is a partial list of the documents that were provided by Ms. Reiger and subsequently examined during the course of this review (Appendix A):

- Statistics listing the number of student withdrawals for academic years Fall 2000-Spring 2005, based on gender
- University guidelines on advertising and recruitment sources
- Statistical data on applications for and admissions to the Mechanical and Electrical Engineering Departments
- Columbia University's equal educational opportunity and sexual harassment policies
- Student grievances and complaint procedures

- Disciplinary procedures
- Procedures for program and research assignments
- Counseling and financial aid services

The National Science Foundation review team (Team) examined Columbia University's compliance with Title IX Regulations in three areas: (1) Program Policy/Design and Oversight, (2) Admission and Recruitment and (3) Program Management. Each of these areas was reviewed in conjunction with applicable Title VI regulatory areas that informed the compliance determinations. The relevant sections of the regulation and its text are reflected within this document.

A. Review of Program Policy/Design and Oversight

The Team reviewed program policy/design and oversight studies, policies and guidelines that give focus and direction to Columbia University's Title IX compliance activities. The following policy statements and guidelines were examined and compared with requirements outlined in *45 CFR, Subpart A, Section 618.135*:

- *Discrimination and Sexual Harassment Policy and Procedure*
- *Policy and Procedure Manual*
- *Toward Equal Opportunity*
- *Student Grievances, Academic Concerns, and Complaints*

There was an examination of administrative systems and processes for mechanical and electrical engineering programs, research activities, and the academic appeal process; an examination of guidelines for recruitment, filing grievances, and complaints. In addition, the team reviewed a University Investigative Report of a formal complaint of sexual harassment.

Reviewers also examined bulletin boards, web sites, and other locations where internal notices were posted to determine the extent to which Columbia University's policy statements, posters and brochures had been disseminated.

Title IX compliance activities were reviewed to determine the roles and responsibilities assigned managers and supervisors. In addition, discussions were held with managers and supervisors regarding their activities and the implementation of Columbia University's Title IX compliance activities and practices. See Section VI below for Regulatory Standards and Findings.

B. Review of Admission and Recruitment

The review included an examination of admission activities—recruitment sources and advertising, the number of male and female applicants for admission, the number of applicants accepted, and the number of applicants who were enrolled in the Electrical

Engineering and Mechanical Engineering Departments from 2002 to 2005. In addition the male and female rates of withdrawal from the engineering departments were examined. The review was conducted in accordance with *45 CFR, Subpart C, Sections 618.305 and 618.310*. See Section VI below for Regulatory Standards and Findings.

C. Review of Program Management

Title IX compliance program plans, updates to the plan, and statistics on enrollments and terminations were discussed to determine the nature and extent of assessment activities. Discussions with managers and supervisors regarding the nature of future assessment activities were conducted. Student research assignments and their advisors, research equipment and financial support were reviewed. This review was conducted in accordance with *45 CFR, subpart D, Sections 618.430 and 618.440*.

Discussions were held with management officials to determine whether Columbia University had established an effective and workable internal monitoring and reporting system. Reports and documents were reviewed, e.g., -- the number of student withdrawals for academic years 2000 to 2005, departments that received discrimination and sexual harassment training. See Section VI below for Regulatory Standards and Findings.

VI. SUMMARY OF ISSUES, FINDINGS AND RECOMMENDATIONS

Columbia University's Title IX Program was reviewed for compliance with the regulations and directives as set forth in *45 CFR Part 618, Sub parts A, C and D*. Following are the regulatory standards that Columbia University should comply with, an assessment of the University's compliance activities, findings, and recommendations.

Regulatory Standard: Designation of responsible employee and adoption of grievance procedures (Subpart A, Section 618.135)

(a) *Designation of responsible employee.* Each recipient shall designate at least one employee to coordinate its efforts to comply with and carry out its responsibilities under these Title IX regulations, including any investigation of any complaint communicated to such recipient alleging its noncompliance with these Title IX regulations or alleging any actions that would be prohibited by these Title IX regulations. The recipient shall notify all its students and employees of the name, office address, and telephone number of the employee or employees appointed pursuant to this paragraph.

(b) *Complaint procedure of recipient.* A recipient shall adopt and publish grievance procedures providing for prompt and equitable resolution of student and employee complaints alleging any action that would be prohibited by these Title IX regulations.

Issue Analysis: Columbia University demonstrated that it meets the requirement to designate a responsible employee to coordinate and implement the enforcement of Title IX requirements and the adoption of grievance procedures, as discussed below. In addition, the University has issued the following policies pertaining to Title IX, and discrimination based upon sex and specified how the policies should be implemented:

- *We Take Affirmative Action Toward Equal Opportunity*⁴
- *Discrimination and Sexual Harassment Policy and Procedure*⁵

“Columbia University admits students to all rights, privileges, programs, and activities without regard to ... sex ...or any other legally protected status. It does not discriminate against any person on the basis of ...sex ... in the administration of its educational policies, admissions policies, scholarship and loan programs, and athletic and other University-administered programs. “

- *Policy of Compliance with Federal, State, and Local Laws Promoting Equal Opportunity, Prohibiting Discrimination, and Authorizing Affirmative Action* “In accordance with all applicable federal, state, and local laws and pursuant to its own policies and operating procedures, Columbia University provides for equal opportunity, prohibits unlawful discrimination and harassment, and takes affirmative action.” The applicable laws include:
- Title IX of the Education Amendments of 1972, as amended, prohibits discrimination on the basis of sex in the conduct or operation of a school’s educational programs or activities, including employment in and admission to these programs and activities.⁶

The University’s Office of Equal Opportunity and Affirmative Action has been designated to coordinate compliance activities under Title IX and the other programs referred to above.

- “Anyone who believes that he or she has been denied equal opportunity should contact this Office, which may investigate complaints and offer advice and counsel on questions relating to equal opportunity and affirmative action, including information about applicable formal grievance procedures and agencies where complaints may be filed.
- “All employees, students, and applicants for employment and admissions are protected from coercion, intimidation, interference, or retaliation for filing a complaint or assisting in an investigation under any of the applicable policies and

4 *Equal Educational Opportunity and Student Nondiscrimination Policies*

Source: http://www.columbia.edu/cu/vpaa/eoaa/docs/student_discrim.html

5 Appendix– A, Tab 13: *Discrimination and Sexual Harassment Comparison Tables*

6 Appendix–A, Tab 12: *Discrimination and Sexual Harassment Policy and Procedure*

laws. Office of Equal Opportunity and Affirmative Action, Columbia University, 103 Low Library, MC 4333, 535 West 116th Street, New York, NY 10027; (212) 854-5511."

Columbia University's equal opportunity and sexual harassment policy statements were compared to policy standards set forth in the Equal Employment Opportunity Commission's (EEOC's) *Enforcement Guidance, Notice 915.002, and June 18, 1999*. The comparisons show: that the University's policy statements meet the standards of the EEOC except in the following areas: (1) that performance by managers, supervisors, etc., will be evaluated on the success of the EEO program and (2) that successful achievement of EEO goals will provide benefits to the agency through increased use of human resources.

Finding: The University is in compliance with the requirements of the applicable provisions.

Recommendation: Columbia University should amend its EEO and sexual harassment policies to highlight the potential impact those policies and their implementation may have on achievement of the University's EEO goals.

Regulatory Standard: Dissemination of Policy (*Subpart A, Section 618.140*)

(a) *Notification of policy.* (1) Each recipient shall implement specific and continuing steps to notify applicants for admission and employment, students and parents of elementary and secondary school students, employees, sources of referral of applicants for admission and employment, and all unions or professional organizations holding collective bargaining or professional agreements with the recipient, that it does not discriminate on the basis of sex in the educational programs or activities that it operates, and that it is required by Title IX and these Title IX regulations not to discriminate in such a manner. Such notification shall contain such information, and be made in such manner, as the designated agency official finds necessary to apprise such persons of the protections against discrimination assured them by Title IX and these Title IX regulations, but shall state at least that the requirement not to discriminate in education programs or activities extends to employment therein, and to admission thereto unless §§618.300 through 618.310 do not apply to the recipient, and that inquiries concerning the application of Title IX and these Title IX regulations to such recipient may be referred to the employee designated pursuant to §618.135, or to the designated agency official.

(2) Each recipient shall make the initial notification required by paragraph (a)(1) of this section within 90 days of September 29, 2000 or of the date these Title IX regulations first apply to such recipient, whichever comes later, which notification shall include publication in:

- (i) Newspapers and magazines operated by such recipient or by student, alumnae, or alumni groups for or in connection with such recipient; and

(ii) Memoranda or other written communications distributed to every student and employee of such recipient.

(b) Publications. (1) Each recipient shall prominently include a statement of the policy described in paragraph (a) of this section in each announcement, bulletin, catalog, or application form that it makes available to any person of a type, described in paragraph (a) of this section, or which is otherwise used in connection with the recruitment of students or employees.

(2) A recipient shall not use or distribute a publication of the type described in paragraph (b)(1) of this section that suggests, by text or illustration, that such recipient treats applicants, students, or employees differently on the basis of sex except as such treatment is permitted by these Title IX regulations.

(c) Distribution. Each recipient shall distribute without discrimination on the basis of sex each publication described in paragraph (b)(1) of this section, and shall apprise each of its admission and employment recruitment representatives of the policy of nondiscrimination described in paragraph (a) of this section, and shall require such representatives to adhere to such policy.

Issue Analysis: Columbia University demonstrated that it meets the requirement to disseminate its Equal Educational Opportunity and Student Nondiscrimination Policies, in large part through posting the policy on the University's website and distributing printed copies of the policy in a published brochure, student handbooks and manuals, i.e.; "GSAS Rules and Regulations 2005 - 2006." There was no evidence that the policy was disseminated by less formal means--posted on bulletin boards, but student knowledge of the policies was based primarily on receiving copies of the policies at orientation and reviewing the policies that were posted on the University website. Faculty and staff were provided training on "Discrimination and Sexual Harassment" during 2003, 2004 and 2005 and the Office of Equal Opportunity and Affirmative Action plans to continue its training of university staff members during 2006-7 .

Finding: The University is in compliance with the requirements of the applicable provisions

Recommendation: The University may wish to consider posting its policies on bulletin boards and expanding its use of campus organizations' newsletters and other campus based publications.

Regulatory Standard: Remedial and Affirmative Action and Self-evaluation (*Subpart C, Section 618.110*)

(a) **Remedial action.** If the designated agency official finds that a recipient has discriminated against persons on the basis of sex in an education program or activity, such recipient shall take such remedial action as the designated agency official deems necessary to overcome the effects of such discrimination.

(b) **Affirmative action.** In the absence of a finding of discrimination on the basis of sex in an education program or activity, a recipient may take affirmative action consistent with law to overcome the effects of conditions that resulted in limited participation therein by persons of a particular sex. Nothing in these Title IX regulations shall be interpreted to alter any affirmative action obligations that a recipient may have under Executive Order 11246, 3 CFR, 1964-1965 Comp., p. 339; as amended by Executive Order 11375, 3 CFR, 1966-1970 Comp., p. 684; as amended by Executive Order 11478, 3 CFR, 1966-1970 Comp., p. 803; as amended by Executive Order 12086, 3 CFR, 1978 Comp., p. 230; as amended by Executive Order 12107, 3 CFR, 1978 Comp., p. 264.

(c) **Self-evaluation.** Each recipient education institution shall, within one year of September 29, 2000:

(1) Evaluate, in terms of the requirements of these Title IX regulations, its current policies and practices and the effects thereof concerning admission of students, treatment of students, and employment of both academic and non-academic personnel working in connection with the recipient's education program or activity;

(2) Modify any of these policies and practices that do not or may not meet the requirements of these Title IX regulations; and

(3) Take appropriate remedial steps to eliminate the effects of any discrimination that resulted or may have resulted from adherence to these policies and practices.

(d) **Availability of self-evaluation and related materials.** Recipients shall maintain on file for at least three years following completion of the evaluation required under paragraph (c) of this section, and shall provide to the designated agency official upon request, a description of any modifications made pursuant to paragraph (c)(2) of this section and of any remedial steps taken pursuant to paragraph (c)(3) of this section.

Issue Analysis: Columbia University did not provide a copy of its affirmative action plans for examination the NSF reviewers for inspection. In addition, formal self-evaluation procedures did not appear to be in place. However, Susan Reiger, Associate Provost, in a letter to the Assistant Administrator for Equal Opportunity Programs of NASA, dated January 26, 2004, described the University's self-evaluation process as follows--"Every year, in its Affirmative Action Plan, Columbia reviews the effects of its employment policies and processes on its male and female academic and non-academic personnel and assesses its compliance with its equal opportunity and affirmative action obligations. The University's evaluation of the student experience is less centralized but no less comprehensive. On a regular basis, the various schools, departments, centers, divisions, and offices of the

University conduct studies and surveys designed to measure and analyze the impact of their policies and processes on male and female students.”⁸

The review team members could not judge the efficacy of this evaluation effort or attest to its existence because it did not examine the various studies and surveys said to have been conducted.

Finding: The Review Team did not examine a sufficient amount of information/data to make a compliance finding.

Recommendation: The University should structure and conduct a self-evaluation that consolidates discrete activities of organizational units engaged in student experiences. Moreover, it should commit to provide a copy of the completed Self-Evaluation and Affirmative Action Plan within the time frame that will be specified by the NSF Director of Civil Rights.

Regulatory Standard: Admission and Preference in Admission (*Subpart C, Section 618.300 and Section 618.305*)

(a) *General.* No person shall, on the basis of sex, be denied admission, or be subjected to discrimination in admission, by any recipient to which §§618.300 through §§618.310 apply, except as provided in §§618.225 and §§618.230.

(b) *Specific prohibitions.* (1) In determining whether a person satisfies any policy or criterion for admission, or in making any offer of admission, a recipient to which §§618.300 through 618.310 apply shall not:

(i) Give preference to one person over another on the basis of sex, by ranking applicants separately on such basis, or otherwise;

(ii) Apply numerical limitations upon the number or proportion of persons of either sex who may be admitted; or

(iii) Otherwise treat one individual differently from another on the basis of sex.

(2) A recipient shall not administer or operate any test or other criterion for admission that has a disproportionately adverse effect on persons on the basis of sex unless the use of such test or criterion is shown to predict validly success in the education program or activity in question and alternative tests or criteria that do not have such a disproportionately adverse effect are shown to be unavailable.

(c) *Prohibitions relating to marital or parental status.* In determining whether a person satisfies any policy or criterion for admission, or in making any offer of admission, a recipient to which §§618.300 through 618.310 apply:

(1) Shall not apply any rule concerning the actual or potential parental, family, or marital status of a student or applicant that treats persons differently on the basis of sex;

(2) Shall not discriminate against or exclude any person on the basis of pregnancy, childbirth, termination of pregnancy, or recovery there from, or establish or follow any rule or practice that so discriminates or excludes;

(3) Subject to §618.235(d), shall treat disabilities related to pregnancy, childbirth, termination of pregnancy, or recovery there from in the same manner and under the same policies as any other temporary disability or physical condition; and

(4) Shall not make pre-admission inquiry as to the marital status of an applicant for admission, including whether such applicant is "Miss" or "Mrs." A recipient may make pre-admission inquiry as to the sex of an applicant for admission, but only if such inquiry is made equally of such applicants of both sexes and if the results of such inquiry are not used in connection with discrimination prohibited by these Title IX regulations. A recipient to which §§618.300 through 618.310 apply shall not give preference to applicants for admission, on the basis of attendance at any educational institution or other school or entity that admits as students only or predominantly members of one sex, if the giving of such preference has the effect of discriminating on the basis of sex in violation of §§618.300 through 618.310.

Issue Analysis: Columbia University presented evidence of compliance with the requirements to provide equal opportunity to male and female students and applicants for admission to its programs. There are disparities between the enrollment levels of male and female graduate students, but it is unclear whether the differences are due to discrimination. Except for differences in the total of males and females the application, acceptance and enrollment rates for the two groups are relatively comparable. Judged by the College of Engineering's admissions policies and engineering programs and research there does not appear to be preferences in admissions.

Academic Programs and Degree Requirements⁹

The School of Engineering and Applied Sciences publishes the admission and completion requirements for any graduate degree in Mechanical and Electrical Engineering. The published requirements do not provide for a preference in admission based on sex. Following are two specific qualification requirements. Both requirements are gender neutral:

⁹ The Graduate Programs, Source: www.engineering.edu/graduate/academics

- “In order to complete the requirements for any graduate degree, the student must plan a program with the department of major interest and then have it approved by the Office of Graduate Student Services; the program may be codified later with the permission of the department and the Assistant Dean.”
- There are three main examinations to take during doctoral [study]:
 - “The Doctoral Qualifying Exam: It contains a 5-hour written engineering exam, a 2-hour mathematics exam, and a 45-minute oral presentation. It is given once a year during the first week of classes for the spring semester in January.”
 - “The proposal exam: an oral presentation to [an] advisor and several other faculty members detailing what [the student] has done and plans to do.”
 - “An oral presentation of [the student’s] dissertation.”

Admission Rates

The admission rates for male and female students are calculated by using the number of applicants, minus the number of applicants accepted for admission, minus the number of students who register for enrollment. The enrollment levels for the Mechanical and Electrical Engineering Departments differ significantly. As shown below the Electrical Engineering Department has far more students enrolled.

Graduate Student Enrollment in the Electrical Engineering Department

The Electrical Engineering Department’s average graduate student enrollment for academic years 2002-2003, 2003-2004, and 2004-2005 was 272 students.¹⁰ The average number of female graduate students was 48 or 18% of the total. Table 1 shows the enrollment levels for each of the three academic years. Female enrollment grew to 55 in 2003/2004, but declined the following year to 46. The proportion of male graduate students was above 80% each year.

Table 2 presents a distribution of the Electrical Engineering Department’s graduate student enrollment by academic degrees and sex, which shows that 64 percent of the female students were enrolled in the Masters Degree Program and 29 percent were enrolled in the Doctoral Program.

Table-1: Electrical Engineering Graduate Student Enrollment for Academic Years 2002-2003, 2003-2004, and 2004-2005, by Sex

Academic Year	Female Students	Male Students	Totals
2002/2003	41 – (17%)	202 – (83%)	243 – (100%)
2003/2004	55 – (19%)	233 – (81%)	288 – (100%)
2004/2005	46 – (16%)	239 – (84%)	285 – (100%)
Average Enrollment:	48 – (18%)	224 – (82%)	272 – (100%)

Table-2: Average Electrical Engineering Graduate Student Enrollment for Academic Years 2002–2005, by Academic Degree and Sex

Academic Degrees	Female Students = 18%	Male Students = 82%	Totals
Ph.D.	14 – (29%)	87 – (39%)	101 – (37%)
M.S.	31 – (64%)	130 – (58%)	161 – (59%)
Professional	2 – (4%)	5 – (2%)	7 – (3%)
DES	1 – (3%)	2 – (1%)	3 – (1%)
Total Enrollment:	48 – (100%)	224 – (100%)	272 – (100%)

Comparison of the Electrical Engineering Department's Enrollment with the NSF National Graduate Student Survey (GSS)¹¹

The proportion of female graduate students in Columbia University's Electrical Engineering Department (18%) differs by 1% from the proportion of women in Electrical Engineering reported in the National Science Foundation Graduate Student Survey for 2003. The GSS reported the following enrollment for Electrical Engineering:

Table 3: Graduate Student Survey: 2003 – Graduate Student Enrollment in Electrical Engineering

Field	Total Enrollment	Males	Females
Electrical Engineering	41, 745 (100%)	33, 954 (81%)	7, 791 (19%)

Electrical Engineering Department Dropout Rates

For the academic years 2002-03, 2003-04 and 2004-05, twenty (20) graduate students in the Electrical Engineering Department failed to advance (dropped out) of the graduate programs. Table 4, below, shows that 75% of the students who failed to advance were male, 25% were female.¹²

Table 5, below, is a distribution of the reasons the graduate students withdrew from the graduate programs, which shows that 3 of the 5 females who withdrew from the program did so because they had failed the Doctoral Qualifying Examination (DQE) twice; one male student reported withdrawing for that same reason. The majority of male graduate students withdrew for personal reasons or they were on a leave of absence.

Table-4: Electrical Engineering Graduate Students Who Failed to Advance During 2002-2005 Academic Years

Total Failed to Advance	Males	Percent of Males	Females	Percent of Female
20	15	75%	5	25%

Table 5: Reasons Electrical Engineering Male and Female Graduate Students Failed To Advance/Dropped Out of the Program (Fall 2002-Spring 2006)

Reasons for Failing to Advance	Female	MS Program	PhD Program	Male	MS Program	PhD Program	Total Male and Female
Leave of Absence	0	0	0	6	2	4	6
Disciplinary Dismissal	0	0	0	1	1	0	1
Personal	0	0	0	6	2	4	6
Failed to Register	1	0	1	1	0	1	2
Failed DQE Twice	3	0	3	1	0	1	4
Withdrawn by University	1	0	1	0	0	0	1
Column Totals	5	0	5	15	5	10	20

Electrical Engineering Graduate Degrees

The number of electrical engineering graduate degrees for 1998, 2000, and 2001 are shown in Table 6, below. The number of female graduate students awarded a PhD degree grew from 0 in 1998 to 4 in 2001. The number of female graduate students awarded Masters Degrees declined from 7 to 4 from 1998 to 2000, but increased to 9 in 2001. The number of male graduate students awarded PhD degrees declined to 10 in 2001 from a high of 12 in 1998.¹³

Table 7: Women as a Percentage of Engineering Graduate Degrees: 2000 And 2001

	Year	Degree	Female	Male	Total
Engineering	2000	PhD	2 (15%)	11 (85%)	13 (100%)
		MS	4 (6%)	59 (94%)	63 (100%)
	2001	PhD	4 (29%)	10 (71%)	14 (100%)
		MS	9 (13%)	60 (87%)	69 (100%)

Application Gender Analysis: Fall 2005

The Electrical Engineering Department conducted an Application Gender Analysis in Fall 2005. The gender analysis examined the number of applicants, the number of accepted applicants, and the number of accepted applicants that registered for the Masters and PhD programs, by gender. The analysis of applicants for the PhD included the number of financial aid offers that were made.¹⁵

Table 8, below, shows that 79% of male applicants were accepted for the Master's program, but only 34% of the applicants registered for the program. A much lower percentage of the women applicants were accepted for the Master's program, 21%, and only 12% of the applicants registered for the program. A much smaller percentage of male and female applicants registered for the PhD program--3% for male applicants and 1% for female applicants.

Table 9, below shows the distribution of financial aid offers made in connection with applications for the PhD Degree. The male, female proportions of the offers do not match the proportions of the percent of applicants accepted for the program. Nevertheless, it is not clear what effect the offers of financial aid had on the level of program registration.

Table 8: Electrical Engineering Application Gender Analysis (Fall 2005)

	Master's		PH.D.	
	Male	Female	Male	Female
Percentage of applicants accepted	79	21	75	25
Percentage of accepted applicants who registered	49	19	38	2
Percentage of applicants who registered	34	12	3	1

Table 9: Electrical Engineering Financial Aid Offers (Fall 2005)

	PH.D.	
	Male	Female
Percentage of Financial Aid Offers	79	21
Percentage of accepted applicants who registered	38	20
Percentage of applicants who registered	3	1

Graduate Student Enrollment in the Mechanical Engineering Department

The Mechanical Engineering Department had an average graduate student enrollment for academic years 2002-03, 2003-04, and 2004-05 of fifty-six (56) students. The average number of female graduate students was 7 or 12% of the total. Table-10 shows the enrollment levels for each of the three academic years. Female enrollment grew to 9 in 2003/2004, but declined the following year to 8. The proportion of male graduate students was well above 80% each year.

Table-11 presents a distribution of the Electrical Engineering Department's graduate student enrollment by academic degrees and sex, which shows that 64 percent of the female students were enrolled in the Masters Degree Program and 29 percent were enrolled in the Doctoral Program.¹⁶

Table-10: Mechanical Engineering Graduate Student Enrollment for Academic Years Fall 2002 – Spring 2005 by Sex

Academic Year	Female Students	Male Students	Totals
2002/2003	5 – (10%)	46 – (90%)	51 – (100%)
2003/2004	9 – (16%)	49 – (84%)	58 – (100%)
2004/2005	8 – (14%)	52 – (86%)	60 – (100%)
Average Enrollment	7 – (12%)	49 – (88%)	56 – (100%)

Table-11: Average Mechanical Engineering Graduate Student Enrollment for Academic Years 2002 - 2005

Academic Degrees	Female Students = 12%	Male Students = 88%	Totals
M.S.	1	14	15
C.V.N.	1	6	7
Ph.D.	5	20	25
M.S. / Ph.D.	0	9	9
Total Enrollment	7	49	56

Comparison of the Mechanical Engineering Department's Enrollment with the National Science Foundation National Graduate Student Survey (GSS)¹⁷

The proportion of female graduate students in Columbia University's Mechanical Engineering Department is a percentage point below the 13% proportion of women in Mechanical Engineering reported in the National Science Foundation Graduate Student Survey for 2003. The GSS reported the following enrollment for Mechanical Engineering:

Table-3: Graduate Student Survey: 2003 – Graduate Student Enrollment in Mechanical Engineering

Field	Total Enrollment	Males	Females
Mechanical Engineering	18, 440 (100%)	16, 076 (87%)	2, 364 (13%)

Dropout Rates

For the academic years 2002-03, 2003-04 and 2004-05, seven (7) graduate students in the Mechanical Engineering Department failed to advance (dropped out) of the graduate programs. Table 12, below, shows that 71% of the students who failed to advance were male, 29% were female.¹⁸

Table-13, below, is a distribution of the reasons the students withdrew from the graduate programs, which shows that male and female graduate students left for either personal reasons or leave of absence. Both females who failed to complete the program were on leave of absence. The Department of Mechanical Engineering did not provide any additional information concerning the students' programs or the nature of the withdrawals.

Table-12: Mechanical Engineering Graduate Students Who Failed to Advance During 2003 To 2005 Academic Years by Gender

Total Failed to Advance	Male	Percent of Males	Female	Percent of Female
7	5	71%	2	29%

Table-13: Reasons Mechanical Engineering Male and Female Graduate Students Failed To Advance/Dropped Out of the Program (Fall 2002-Spring 2005)

Reason for Withdrawals	Female	Male	Total Male and Female
Leave of Absence	2	2	4
Personal		3	3
Total	2	5	7

Mechanical Engineering Graduate Degrees

The number of Mechanical Engineering graduate degrees for 1998, 2000, and 2001 are shown in Table-14, below. The number of female graduate students awarded a PhD degree grew from 0 in 1998 to 1 in 2001. The number of female graduate students awarded Masters degrees increased from 1 to 7 from 1998 to 2000, but decreased to 2 in 2001. The number of male graduate students awarded PhD degrees grew to 10 in 2001 from a low of 2 in 1998.

Table-14: Mechanical Engineering Graduate Degrees by Sex for 1998,

2000 and 2001

	Year	Degree	Female	Male	Total
Mechanical Engineering	1998	PhD	NA	2 (100%)	2 (100%)
		MS	1 (4%)	27 (96%)	28 (100%)
		Total	1 (3%)	29 (97%)	30 (100%)
	2000	PhD	NA	3 (85%)	3 (100%)
		MS	7 (50%)	7 (50%)	14 (100%)
		Total	7 (41%)	10 (59%)	17 (100%)
	2001	PhD	1 (10%)	9 (90%)	10 (100%)
		MS	2 (20%)	8 (80%)	10 (100%)
		Total	3 (15%)	17 (85%)	20 (100%)

Tab: Appendix A-9

Comparison of Mechanical Engineering Graduate Degrees with the NSF/SRS: Survey of Earned Doctorates and Tabulations from the National Center for Educational Statistics

The NSF/SRS: Survey of Earned Doctorates and Tabulations from the National Center for Educational Statistics for Masters Degree recipients compiled statistics on the number of degrees earned by women in all fields of study including Engineering. The statistics were not disaggregated to the level of engineering programs so a less than perfect match is possible in comparing Columbia University's Mechanical Engineering graduate degrees with graduate degrees in the field of Engineering.

Table 7, reprised below, shows women as a percentage of the Masters and PhD degrees in the field of Engineering and the NSF/SRS surveys in 2000 and 2001, found women were, respectively, 20.7% and 21.2% of the recipients of Masters degrees in Engineering. This is a lower proportion than the 50% in 2000, but a higher percentage than the 20% in 2001 for women in Columbia University's Mechanical Engineering program who earned Masters degrees.

When comparing the proportion of women who earned doctorate degrees the situation is reversed: In 2000 and 2001 the proportion of women in Columbia University's Mechanical Engineering program who earned PhD degrees was lower in 2000, but higher in 2001 than the proportion of women who received PhD degrees in Engineering.

Table 7: Women as a Percentage of Engineering Graduate Degrees: 2000 And 2001

	Year	Degree	Female	Male	Total
Engineering	2000	PhD	2 (15%)	11 (85%)	13 (100%)
		MS	4 (6%)	59 (94%)	63 (100%)
	2001	PhD	4 (29%)	10 (71%)	14 (100%)
		MS	9 (13%)	60 (87%)	69 (100%)

It is noted that the Mechanical Engineering Department did not conduct an Applicant Gender Analysis

Mechanical Engineering Department's Financial Aid Offers: Fall 2002–Spring 2005

From Fall 2002 to Spring 2005 semesters, approximately the same percentage of female and male graduate students in the Mechanical Engineering Department was offered financial aid. Table 15, below, shows that the rate for female students was 17 percent and the rate for male students was 16 percent.¹⁹

Table 15: Mechanical Engineering Department: Recipients of Financial Aid by Gender

Gender	Applicants	Offers of Financial Aid	Percentage
Female	47	8	17.02%
Male	186	30	16.13%

Finding: The University is in compliance with the requirements of the applicable provisions.

Recommendation: The proportion of male and female graduate students in both the Electrical and Mechanical Engineering Departments in many respects reflected the male-female proportions found in the NSF "National Survey of Graduate Students." However, the overall number of women in the field of engineering is low and their under representation should be addressed by Columbia University's Title IX Program. Columbia University should evaluate its admission practices to determine what factors are contributing to the low number of male and female applicants for the Electrical Engineering PhD who ultimately register for the program. In the Applicant Gender Analysis that was conducted by the Department of Electrical Engineering, financial aid was not shown to have had a significant

influence in determining the level of registration for the PhD degree. A more comprehensive study is needed to identify the barriers to registration based on gender. Such a study should be a part of the comprehensive self-evaluation process in accordance with the timeframe designated by the Director, NSF, and Office of Equal Opportunity Programs.

Regulatory Standard: Recruitment, *Subpart C, Section 618.310*

(a) *Nondiscriminatory recruitment.* A recipient to which §§618.300 through 618.310 apply shall not discriminate on the basis of sex in the recruitment and admission of students. A recipient may be required to undertake additional recruitment efforts for one sex as remedial action pursuant to §618.110(a), and may choose to undertake such efforts as affirmative action pursuant to §618.110(b).

(b) *Recruitment at certain institutions.* A recipient to which §§618.300 through 618.310 apply shall not recruit primarily or exclusively at educational institutions, schools, or entities that admit as students only or predominantly members of one sex, if such actions have the effect of discriminating on the basis of sex in violation of §§618.300 through 618.310.

Issue Analysis: Under Title IX, educational institutions are required to “implement, specific steps designed to encourage individuals of the previously excluded sex to apply for admission to such institution. Such steps shall include instituting recruitment which emphasizes the institution's commitment to enrolling students of the sex previously excluded.” There is no evidence that the number of female graduate students, compared to the number of male graduate students, in the Electrical and Mechanical Engineering Departments, is due to institutional practices that previously excluded females. However, the disparity may be sufficiently significant to warrant treatment of the circumstances as if exclusion was a factor.

A determination of compliance based on actions taken on behalf of the Electrical and Mechanical Engineering Departments would show that few “specific steps designed to encourage [females]...to apply for admission” have been taken. In an interview with the reviewers, the Chair of the Electrical Engineering Department said, “There is no formal MS recruiting activity.” The evidence of Columbia University’s efforts to attract both male and female students reflects a strategy to increase the enrollment of women not only in engineering, but also in the sciences and in engineering.

Outreach directed specifically toward females is being carried out by Women in Science at Columbia (WISC), an organization that “was founded in February 2004 by women graduate students in the Chemistry department. The organization is a broad group of women scientist working to promote mentoring and support among the women in their individual departments, across scientific disciplines, and throughout the university.”

WISC's outreach activities directed toward recruiting females for participation in the sciences included the following activities:

- A webpage on the University's website
- Girl's Science Day 2004
- Saturday Science Seminars—a 6-week pilot program organized by WISC in conjunction with the Double Discovery Center
- Take A Girl to College Day
- WISC sponsored speakers that included Susan Rieger speaking on discrimination.

Columbia University attracts students from around the world. It is one of the leading universities in the USA and its school of engineering is an acknowledged leader in the various engineering disciplines. However, officials discussed with the reviewers their awareness of the need for special efforts to recruit women for science and engineering.

Finding: The University is in compliance with the requirements of the applicable provisions.

Recommendation: Columbia University should develop recruitment goals and objectives and measure the effectiveness of its recruitment activity to aid in the reduction of the applicants who fail to register. The applicant pools for academic years 2003 – 2005 were shown to have exceeded the number of registrants by more than 50 to 1 and for females the number was greater. A new recruitment strategy is needed, a strategy based on sound analysis and careful planning; which is an additional reason for the development of a new approach to program evaluation, as recommended above.

Regulatory Standard: Education programs or activities *Subpart D, Section 618.400* and Access to course offerings *Section 618.415*

a) A recipient shall not provide any course or otherwise carry out any of its education program or activity separately on the basis of sex, or require or refuse participation therein by any of its students on such basis, including health, physical education, industrial, business, vocational, technical, home economics, music, and adult education courses.

(b)(1) With respect to classes and activities in physical education at the elementary school level, the recipient shall comply fully with this section as expeditiously as possible but in no event later than one year from September 29, 2000. With respect to physical education classes and activities at the secondary and post-secondary levels, the recipient shall comply fully with this section as expeditiously as possible but in no event later than three years from September 29, 2000.

(2) This section does not prohibit grouping of students in physical education classes and activities by ability as assessed by objective standards of individual performance developed and applied without regard to sex.

(3) This section does not prohibit separation of students by sex within physical education classes or activities during participation in wrestling, boxing, rugby, ice hockey, football, basketball, and other sports the purpose or major activity of which involves bodily contact.

(4) Where use of a single standard of measuring skill or progress in a physical education class has an adverse effect on members of one sex, the recipient shall use appropriate standards that do not have such effect.

(5) Portions of classes in elementary and secondary schools, or portions of education programs or activities, that deal exclusively with human sexuality may be conducted in separate sessions for boys and girls.

(6) Recipients may make requirements based on vocal range or quality that may result in a chorus or choruses of one or predominantly one sex.

[While engineering is not specifically mentioned, this standard is applicable].

Issue Analysis: Columbia University provided evidence of compliance with the requirement to provide male and female graduate students equal access to engineering programs and courses, research opportunities, and research facilities--laboratories, research equipment, and other benefits. Students of the Electrical Engineering Department indicated that the primary equipment used is a computer and nearly all of the students have access to the department's computers and own a computer. None of the students who were interviewed expressed a lack of access to any programs, courses, or equipment.

The Electrical Engineering Department had one female faculty member. There were no females on the faculty of the Mechanical Engineering Department. Examination of the roster of graduate students and their advisors indicates that advisor assignments were based on the mutual interest of the students and the faculty members. There was no indication of sexual bias in access to course offerings education programs in the Electrical Engineering Department, whose female faculty member was assigned both male (4) and female (3) graduate students.

Finding: The Columbia University is in compliance with the requirements of the applicable provisions.

Recommendation: None.

Regulatory Standard: Counseling and use of appraisal and counseling materials, *Subpart D, Section 618.425*

(a) **Counseling.** A recipient shall not discriminate against any person on the basis of sex in the counseling or guidance of students or applicants for admission.

(b) **Use of appraisal and counseling materials.** A recipient that uses testing or other materials for appraising or counseling students shall not use different materials for students on the basis of their sex or use materials that permit or require different treatment of students on such basis unless such different materials cover the same occupations and interest areas and the use of such different materials is shown to be essential to eliminate sex bias. Recipients shall develop and use internal procedures for ensuring that such materials do not discriminate on the basis of sex. Where the use of a counseling test or other instrument results in a substantially disproportionate number of members of one sex in any particular course of study or classification, the recipient shall take such action as is necessary to assure itself that such disproportion is not the result of discrimination in the instrument or its application.

(c) **Disproportion in classes.** Where a recipient finds that a particular class contains a substantially disproportionate number of individuals of one sex, the recipient shall take such action as is necessary to assure itself that such disproportion is not the result of discrimination on the basis of sex in counseling or appraisal materials or by counselors.

Issue Analysis: The reviewers found no evidence that would indicate that Columbia University discriminated against any person based on sex in the counseling or guidance of students or applicants for admission or in the use of appraisal and counseling materials. Compliance was demonstrated in the description of counseling services described in the Policy Statement on Discrimination and Sexual Harassment, which is posted on the University's website. The policy statement contains procedures for accessing "Confidential Guidance and Counseling." Counseling may be provided by the University "Ombuds Officer" or a member of the University Panel on Discrimination and Sexual Harassment.

Finding: The University is in compliance with the requirements of the applicable provisions.

Recommendation: A small number of students were familiar with the discrimination and sexual harassment policies and procedures. These policies and procedures should be more broadly disseminated and by a variety of media and formats. There should be scheduled reminders and constant communication on the services and protections afforded by Title IX.

Regulatory Standard: Financial Assistance, *Subpart D, Section 618.430*

(a) **General.** Except as provided in paragraphs (b) and (c) of this section, in providing financial assistance to any of its students, a recipient shall not:

(1) On the basis of sex, provide different amounts or types of such assistance, limit eligibility for such assistance that is of any particular type or source, apply different criteria, or otherwise discriminate;

(2) Through solicitation, listing, approval, provision of facilities, or other services, assist any foundation, trust, agency, organization, or person that provides assistance to any of such recipient's students in a manner that discriminates on the basis of sex; or

(3) Apply any rule or assist in application of any rule concerning eligibility for such assistance that treats persons of one sex differently from persons of the other sex with regard to marital or parental status.

(b) *Financial aid established by certain legal instruments.* (1) A recipient may administer or assist in the administration of scholarships, fellowships, or other forms of financial assistance established pursuant to domestic or foreign wills, trusts, bequests, or similar legal instruments or by acts of a foreign government that require that awards be made to members of a particular sex specified therein; *Provided*, that the overall effect of the award of such sex-restricted scholarships, fellowships, and other forms of financial assistance does not discriminate on the basis of sex.

(2) To ensure nondiscriminatory awards of assistance as required in paragraph (b) (1) of this section, recipients shall develop and use procedures under which:

(i) Students are selected for award of financial assistance on the basis of nondiscriminatory criteria and not on the basis of availability of funds restricted to members of a particular sex;

(ii) An appropriate sex-restricted scholarship, fellowship, or other form of financial assistance is allocated to each student selected under paragraph (b) (2) (i) of this section; and

(iii) No student is denied the award for which he or she was selected under paragraph (b) (2) (i) of this section because of the absence of a scholarship, fellowship, or other form of financial assistance designated for a member of that student's sex.

(c) *Athletic scholarships.* (1) To the extent that a recipient awards athletic scholarships or grants-in-aid, it must provide reasonable opportunities for such awards for members of each sex in proportion to the number of students of each sex participating in interscholastic or intercollegiate athletics.

(2) A recipient may provide separate athletic scholarships or grants-in-aid for members of each sex as part of separate athletic teams for members of each sex to the extent consistent with this paragraph (c) and §618.450.

Issue Analysis: The Review Team did not obtain discreet data on the areas set forth in Subpart from which the standard was taken. Accordingly, it determined that the

determination of compliance would be determined based on the presence of information that would be reflected in the Columbia University Equal Opportunity Office complaint log. Columbia University's discrimination complaint processing procedures are set forth in its statement of Discrimination and Sexual Harassment Policy and Procedure.

The complaint processing procedures are comprehensive and include a statement of policy and purpose, legal background, limitations, responsibilities, informal resolution, formal complaints, and interview and other essential process descriptions. Reviewers were informed that if employees have a complaint, they might also go to the Ombuds Officer or the University Panel on Discrimination and Sexual Harassment.

Reviewers examined the complaints log provided by the university's Equal Opportunity and Affirmative Action Program office. The examination included all of the complaints listed for the following elements: Equal Opportunity counseling/mediation; basis for the complaints; Equal Opportunity issues alleged; timeliness of investigation; disposition of the case; and resolution of any appeals. Although the log was sparse, the reviewers did not find anything unusual or untimely. In addition to examining the complaints log, reviewers examined a completed investigation report. All of the complaints were mediated or investigated and resolved satisfactorily.

The Equal Opportunity complaint investigation procedures and the Discrimination and Sexual Harassment Policy and Procedure are posted on the University website.

Finding: The University is in compliance with the requirements of the applicable provisions.

Recommendation: None.

VII. SURVEY RESULTS

Management officials and faculty members were questioned regarding their roles and responsibilities in the Title IX Program. Students were interviewed to survey their perceptions of the efficacy of the Title IX Program. A total of eighteen (18) women and twenty (20) men were interviewed. As an inducement to gain confidence of the interviewees, the Team advised them that the results of the interview process would be held in confidence as this was a review to determine whether there is need for more intensive inquiry and that the results of the review process would serve as a guide to the modification and improvement of existing programs as well as the administration of existing programs.

A. Issues

- To what extent do graduate students in the Departments of Mechanical and Electrical Engineering believe that sex is a factor applied to courses offered,

research assignments, use of facilities and equipment, mentoring and counseling, financial and other services, and day-to-day academic activities?

- Do graduate students in the Departments of Mechanical and Electrical Engineering believe that sex influences the type of responsibilities given to individual students?
- To what extent do graduate students in the Departments of Mechanical and Electrical Engineering believe management officials and staff are supportive of the goals and objectives of the Title IX program?
- Are graduate students in the Departments of Mechanical and Electrical Engineering provided an orientation on nondiscrimination, based on sex?
- To what extent do graduate students in the Departments of Mechanical and Electrical Engineering believe that management officials and staff are sensitive to issues related women in the sciences and engineering?
- Are graduate students in the Departments of Mechanical and Electrical Engineering aware of any barriers that have prevented men or women from full participation in educational programs and research activities?
- Are women provided the same opportunities for skill-specific and developmental training as males?

B. General Results - Mechanical Engineering Department

The individuals interviewed indicated that, generally, women did not experience difficulties or barriers regarding access, participation in research projects, financial assistance, or receiving advanced training. However, none were aware of the EEO publications, harassment policy, or the identity of the EEO Officer. The interviewees also indicated that the recruitment of women was satisfactory, there were no problems with retention, and everyone has an equal opportunity.

C. Perceptions

- When asked if women have access to instruction and facilities, all students interviewed indicated that they had access to the facilities and equipment without discrimination.
- When asked if there has been participation in research projects or if there has been a lack of opportunity for women, none of those interviewed indicated there was a problem in these areas.

- The procedure for appointment to projects is that students self identify the areas of interest, often by seeking out a faculty member with the area of expertise of their interest.
- None of the individuals interviewed stated that they believed gender was a factor in the appointments that were made.
- Only one (1) female student indicated that she had not received financial assistance or performed teaching assistant responsibilities, while the other interviewees did not specify if they believe gender was a factor in their acceptance or approval of aid.
- All of the interviewees indicated that there are no impediments to women's ability to advance in training or special assignments at SEAS.
- None of the interviewees indicated that they had been involved in a sexual harassment complaint.
- None of the interviewees knew the identity of the EEO Officer.
- The interviewees indicated that, generally, they are not aware of any publications regarding the EEO process.
- The interviewees indicated that there is no general knowledge of a formal harassment policy.
- The interviewees indicated that they believe SEAS is doing enough to recruit women but funding is not made available to women abroad.
- Students indicated that the retention problem is a result of academic difficulties only.
- Students indicated that there is equal opportunity in SEAS for everyone and decisions are made based on merit.

D. General Results - Electrical Engineering Department

The majority of the individuals interviewed did not believe gender was a factor regarding access to instruction, facilities, other educational tools, or financial aid and health assistance. However, most of the interviewees were not aware of the complaint process at SEAS or the identity of the equal opportunity officer, but more women were aware of a sexual harassment complaint policy at SEAS than men. In addition,

most of the interviewees indicated that they did not know or did not comment on whether they knew the sexual harassment policy was in writing or enforced.

E. Perceptions

- Ten (10) female and twelve (12) male students indicated that gender is not a factor in accessing instruction, facilities and other educational tools essential for their study and work. However, one (1) female student indicated that gender was a factor, while five (5) women and two (2) men did not comment.
- One (1) female student and two (2) male students indicated that gender is a factor in accessing financial and health assistance. However, nine (9) female and nine (9) male students did not believe gender is a factor, while six (6) women and three (3) men did not comment.
- Twelve (12) female students and eleven (11) male students indicated that they have never been involved in an Equal Opportunity or a sexual harassment complaint, while four (4) women and three (3) men did not comment.
- Ten (10) female and nine (9) male students indicated that they have never been accused of, witnessed, or experienced sexual harassment. However, one (1) female student indicated that she had, while five (5) women and five (5) men did not comment.
- Two (2) female students indicated that they know what the complaint process at SEAS is and are aware of the identity of the equal opportunity officer. However, eight (8) women and ten (10) men do not know and six (6) women and four (4) men did not comment.
- Five (5) female students indicated that they are aware of a sexual harassment complaint policy at SEAS. However, four (4) women and seven (7) men did not know and seven (7) women and five (5) men did not comment.
- Three (3) female and one (1) male student indicated that the sexual harassment complaint policy is in writing, while one (1) female student indicated that the policy is not in writing. However, two (2) women and seven (7) men did not know and ten (10) women and six (6) men did not comment.
- One (1) female and one (1) male student indicated that the sexual harassment complaint policy is enforced. However, five (5) women and seven (7) men indicated that they did not know if the policy is enforced, while ten (10) women and six (6) men did not comment.

F. Recommendations as offered by students

- As a component of the interview process, the Team sought suggestions or recommendations from the students as a way to get their input regarding strategies, whether they are long term or short term to improve the utilization of all resources notwithstanding gender and ways to improve female enrollment in the sciences and engineering. A sampling of the recommendations follows:
- Women should be exposed to sciences at an early age.
- Women should be taken on factory visits at early ages.
- Women should be given toys or play instruments that require the use of mechanical aptitude.
- Women should be exposed to a mechanical environment through jobs at earlier ages.
- Find alternate titles for engineering positions and eliminate stereotypes regarding mechanical engineering positions. The term "mechanic" is perceived as a harsh and pedestrian term.
- Women should be portrayed in engineering positions in the movies, on television and in theatre.
- Women and men should receive additional funding and pay in engineering to steer attention to the field-money influences interest and perception...market the financial benefits.
- Make known the national crises and the lack of U.S. graduate students in engineering-the lack of engineers is a security concern for the future.
- The National Science Foundation and other Institutions should make promotional films touting engineering among other science fields as "cool".
- The nation should embark on early choice programs to teach mechanical and related engineering programs through immersion.

VIII. Promising Practices

As Columbia University has not provided the Self-Evaluations or the Affirmative Action Plans within the meaning of the Title VI requirements, the Director should withhold judgment on the promising practices that might be reflected from the activities in this

review. As the examination of the documents are subsequently submitted and examined, the promising practices can be compared to the efforts at other institutions to reveal whether the activities and programs are appropriate for inclusion in a "Best Practices" instrument.

Recommendations that were offered by the Students should be considered to determine the extent to which they are already a component of proactive measures that Columbia utilizes and to the extent that it has already implemented them or planned for their implementation. Based on the enthusiasm displayed by the students, their continued involvement in strategic planning and outreach may further increase the likelihood of program success.